The Assessment of Quality of Life (AQoL)

Description

The Assessment of Quality of Life (AQoL), developed by Australian researchers, is a multi-attribute utility (MAU) health-related quality of life instrument. While it can be used to measure health-related quality of life alone, its main purpose is to measure the ‘utility’ of health states (that is, the preferences people have for different health states) in a way suitable for use in economic evaluation studies, in particular, cost-utility analysis.

The AQoL consists of 15 items (attributes) covering five dimensions: illness (use of medicines, reliance on medicines and medical aid, need for regular treatment), independent living (assistance with self care, assistance with household tasks, mobility at home and community), social relationships (closeness and warmth, friendship and loneliness, family role), physical senses (vision, hearing, communication) and psychological wellbeing (sleep, low mood, pain) (Hawthorne et al 1999). Each item has 4 response levels. For example, the item concerning mobility (Item 6) asks: ‘Thinking about how easily I can get around my home and community:
A. I get around my home and community by myself without any difficulty.
B. I find it difficult to get around my home and community by myself.
C. I cannot get around the community by myself, but I can get around my home with some difficulty.
D. I cannot get around either the community or my home by myself.’

To provide a profile of health-related quality of life, each item on the AQoL is scored out of 3 (where ‘A’ scores 0, ‘B’ scores 1, ‘C’ scores 2, and ‘D’ scores 3). The maximum score is 9 per domain and 45 in total, and a higher score indicates poorer quality of life. An algorithm is available to transform unweighted health-related quality of life scores into utility scores weighted by preferences. The AQoL provides a utility score that ranges from 1.00 (full health) to 0.00 (death-equivalent health states) to −0.04 (health states worse than death) (Hawthorne and Osborne 2005). The illness domain is not used in the calculation of utility scores.

The AQoL has high internal consistency (alpha = 0.81) (Hawthorne et al 1999) and in general correlates well to other MAU instruments (r = 0.75) such as the EQ-5D (Hawthorne et al 2001). Unlike other generic utility instruments, a unique feature of the AQoL is that the utility weights have been derived from an Australian population sample (Hawthorne et al 2001) and norms of the Australian population are available (Hawthorne and Osborne 2005).

The AQoL is sensitive to changes in health states (Hawthorne and Osborne 2005). There is a direct relationship between utility scores obtained using the AQoL and healthcare costs (Hawthorne et al 2001). As a utility measure, it has been suggested that the minimal clinically important difference of the AQoL is 0.06 (Hawthorne and Osborne 2005).

The AQoL takes 5 minutes to complete and can be self-completed by patients. Administering the AQoL either as a postal questionnaire or over the telephone did not result in significant differences in scores (Hawthorne 2003). The questionnaire, a manual, and the algorithm to derive the utility scores are available from the AQoL website. Registration is required prior to using the AQoL in a research study. Recently, the AQoL-2 has been developed (Richardson et al 2004) but further investigation of the clinimetric properties of this new version is required.

Commentary

Physiotherapists may be interested in assessing and monitoring the quality of life of patients. This may be particularly relevant for physiotherapists working with patients with a chronic condition (eg, arthritis, frailty). The AQoL is a generic instrument so its use is not restricted to specific health conditions. Each domain can be reported separately, giving insight into how a health condition affects a person’s life. For example, in a recent study we showed that the domain of independent living was most significantly affected in people after ankle fracture (Lin et al 2008).

The AQoL has been specifically designed for use in economic evaluation studies as a utility instrument to provide a measure of benefit (in quality-adjusted life-years, QALYs). In QALYs, the number of life years gained is weighted by an index of utility, which acts as an exchange rate between the quantity and quality of life. When using AQoL as an outcome measure, the cost-effectiveness of a treatment, compared to an alternative, is expressed in terms of cost per QALY gained. An advantage of using a generic measure of outcome like the QALY is that it enables the comparison of the costs and outcomes of widely varying interventions in different fields of healthcare (eg, the cost-effectiveness of an intervention for stroke can be compared with that of an intervention for obesity). This is a unique feature among the outcome measures available to physiotherapists.

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References


Website
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Osteoarthritis Index (WOMAC)

Description

The WOMAC was developed in the early 1980s as a disease-specific measure for hip and knee osteoarthritis (Bellamy 2009). It was designed to provide a standardised assessment of self-reported health status while incorporating activities relevant to patients. The instrument has since been used extensively in lower limb osteoarthritis and joint replacement research. The WOMAC consists of 24 items: 5 pain, 2 stiffness, and 17 physical function items. It produces three subscale scores (pain, stiffness, and physical function) and a total score. The WOMAC has been translated into 80 languages and the Australian version (3.1) is available in 5-point Likert, 11-point numerical rating, and 100 mm visual analogue scale formats. Clinicians and researchers interested in obtaining a copy of the instrument and User Guide should visit the WOMAC website for information about licensing and applicable fees.

Instructions to the client and scoring: The WOMAC can be self-administered and takes approximately 5 minutes to complete. Patients are asked to answer each question with regard to the pain, stiffness, or difficulty experienced in the previous 48 hours. In particular, the Likert version is simple to use and offers 5 response options ranging from ‘none’ to ‘extreme’. A response of ‘none’ is scored as 0, ‘mild’ as 1, ‘moderate’ as 2, ‘severe’ as 3, and ‘extreme’ as 4. Scores for each section are summed to produce pain, stiffness, and physical function subscale scores. The WOMAC is scored on a best to worst scale, so that lower subscale scores represent less pain, less stiffness, or better physical function. A total WOMAC score can also be produced and is commonly transformed to a 0–100 scale for ease of interpretation and comparison with other studies.

Reliability, validity and sensitivity to change: Many studies have reported the psychometric properties of the WOMAC (Bellamy 2009), including a comprehensive literature review (McConnell et al 2001). Each subscale has been shown to be internally consistent and test-retest reliability has been reported for the pain and physical function subscales (McConnell et al 2001). The WOMAC has also demonstrated construct validity when compared with other measures including joint range of motion, gait tests, and the Medical Outcomes Study 36-Item Short Form (SF-36). The responsiveness of the WOMAC has been documented across a number of research settings, including an Australian study which showed the measure was highly efficient in detecting short-term improvements after joint replacement (Ackerman et al 2006).

Commentary

The WOMAC is an easily-administered instrument that is used widely to evaluate outcomes of osteoarthritis interventions, both conservative and surgical. From a physiotherapy perspective, the measure has been used in acute and rehabilitation settings and has provided valuable information about the efficacy of land-based exercise for osteoarthritis (including pre- and post-operative programs), aquatic physiotherapy, and patellar taping. In research settings, the disease-specific WOMAC is often concurrently administered with a generic (non-disease-specific) measure of health status or Health-Related Quality of Life to obtain a more holistic assessment and enable comparison with data from other patient groups.

The WOMAC covers a range of home-based and community-based functional activities that are important for many people with osteoarthritis. In our experience, the WOMAC is straightforward for patients to complete, although we have encountered missing data for activities which are not commonly performed in the early post-operative period after joint replacement, eg, ‘bending to the floor’ (Question 12) and ‘getting in or out of the bath’ (Question 20). However, the User Guide provides information on score substitution for missing data (Bellamy 2009).

Although there are no formal criteria for the classification of WOMAC scores, a cut-off score of 39 and above (on a 0–100 scale) has been used by Canadian researchers to denote severe arthritis potentially requiring joint replacement (Hawker et al 2000). Based on scores reported by joint replacement patients in Ontario, Canada, the positive predictive value of this cut-off score was verified by examining the concordance between WOMAC scores and clinical examination and X-ray findings. Clinically important differences for improvement and deterioration have also been published; however, these vary substantially depending on the setting and statistical approach used (Chesworth et al 2008). Clinicians may also be interested in international research showing that preoperative WOMAC scores predict pain and physical function up to 2 years after joint replacement (Fortin et al 2002, Lingard et al 2004).

In summary, the WOMAC is a valid, reliable and responsive measure for evaluating outcomes of interventions for people with osteoarthritis. The clear wording of the items together with the simple scoring algorithm enhances the applicability of this instrument in both clinical and research settings.

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References


Website
www.womac.com